Chapter 1

Introduction

In order for planetary science data to be used by those not involved with its creation, certain supporting information must be available with the data. Such information enables effective data access and interpretation. Therefore, standards regarding the quality and completeness of data must be enforced. Also, the interchange of data is increasingly important in planetary science. Electronic communication mechanisms have grown in sophistication, and the use of new media (such as CD-ROMs and DVD) for data storage and transfer requires format standards to ensure readability and usability. The Planetary Data System (PDS) has therefore developed a nomenclature that is consistent across discipline boundaries, as well as standards for labeling data files.

1.1 PDS Data Policy

Only data that complies with PDS standards will be published in volumes which are labelled "Conforms to PDS Standards". Non-compliant data published in recognized formats should be authored by the publishing institution with PDS participation acknowledged only as "funded by PDS". The PDS Management Council will make decisions on compliance waivers. Non-compliant data sets will be permitted only under unusual circumstances.

1.2 Purpose

This document is intended as a reference manual to be used in conjunction with the *PDS Data Preparation Workbook* and the *Planetary Science Data Dictionary*. The *PDS Data Preparation Workbook* describes the end-to-end process for submitting data to the PDS and gives instructions for preparing data sets. In addition, a glossary of terms used throughout this document is contained as an appendix to the workbook. The *Planetary Science Data Dictionary* contains definitions of the standard data element names and objects. This reference document defines all PDS standards for data preparation.

1.3 Scope

The information included here constitutes Version 3.3 of the Planetary Data System data preparation standards for producing archive quality data sets.

1.4 Audience

This document is intended primarily to serve the community of scientists and engineers responsible for preparing planetary science data sets for submission to the PDS. These include restored data from the era prior to PDS, mission data from active and future planetary missions, and data from earth-based sites. The audience includes personnel at PDS Discipline and Data Nodes, mission Principal Investigators, and Ground Data System engineers.

1.5 Document Organization

The first chapter of this document, Chapter 1 - Introduction, provides introductory material and lists of other reference documents. The remaining chapters provide a dictionary of data preparation standards, organized alphabetically by standard name.

1.6 Other Reference Documents

The following reference sources are mentioned in this document:

- Batson, R. M., (1987) "Digital Cartography of the Planets: its Status and Future", *Photogrammetric Engineering & Remote Sensing 53,* 1211-1218.
- Davies, M.E., *et al* (1991) "Report of the IAU/IAG/COSPAR Working Group on Cartographic Coordinates and Rotational Elements of the Planets and Satellites: 1991", *Celestial Mechanics*, 53,377-397.
- Greeley, R. and Batson, R.M. (1990) *Planetary Mapping*, Cambridge University Press, Cambridge, 296p.
- *Guide on Data Entity Naming Conventions*, NBS Special Publication 500-149.
- *Planetary Science Data Dictionary,* JPL D-7116 Rev D, July 15, 1996, (Available from PDS).
- *Planetary Data System Data Preparation Workbook Version 3.1*, JPL D-7669 Part 1, February 17, 1995, (Available from PDS)
- *Issues and Recommendations Associated with Distributed Computation and Data Management Systems for the Space Sciences,* National Academy Press, Washington, DC, 111p.

International Standards Organization (ISO) References

- ISO 9660:1988 “Information Processing - Volume and File Structure of CD-ROM for Information Exchange”, April 15, 1988.
- ISO 646:1991 ASCII character set.

- ISO 8601:1988 “Data Element and Interchange Formats – Representations of Dates and Times”

SFDU and PVL References

- *Standard Formatted Data Units - Structure and Construction Rules,* CCSDS 620.0-R-1.1c, May 1992.
- *Standard Formatted Data Units - A Tutorial;* CCSDS 620.0-G-1, May 1992.
- *Parameter Value Language Specification (ccsd0006);* CCSD 641.0-R-0.2, June 1991.
- *Parameter Value Language -- A Tutorial;* CCSDS 641.0-G-1.0, May 1992.

1.7 Online Document Availability

The *Planetary Science Data Dictionary*, *Planetary Data System Data Preparation Workbook*, and this document, the *Planetary Data System Standards Reference* are available online. Information on accessing these references may be found on the PDS website, which is located at:

http://pds.jpl.nasa.gov

To obtain a copy of these documents, or for questions concerning these documents, contact the PDS Operator, or a PDS data engineer.